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SPECIALIZING IN GIS FIELD DATA COLLECTION TOOLS

Software

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Maximizing Accuracy and Productivity with Trimble GPS

Presented by

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Materials – Electronic Format

http://www.compasstoolsinc.com/eve
nts/ND_GIS_Users.htm

Agenda

- **Increase GPS Accuracy for existing equipment**
  - Garmin, GeoXT, GeoXH
  - H-Star Technology
  - Hardware, Infrastructure advances to increase Accuracy
- **Increase Productivity**
  - Training
  - Hardware
  - Software
  - Peripherals
  - Workflow

Increase GPS Accuracy

■ **Garmin**

- Download and use Trimble Mission Planning Software

  » http://www.trimble.com/planningsoftware_ts.asp

- Recognize Limitations of Configuration Settings

- Avoid High-Multipath Environments

Increase GPS Accuracy

- GeoXT
  - Hurricane Antenna, Pole, Bipod Legs
  - Configuration Settings
  - Mission Planning – Optimum satellite availability and configuration
  - Avoid high-multipath environments whenever possible
  - Use Offsets instead of going under canopy or up tight to building

Increase GPS Accuracy

- GeoXT
  - ArcPad – real-time source other than WAAS, or post process
  - Baseline length – search out closer base station providers
  - Understand WGS84/NAD 83 shift for PP, verify base provider ref coord
  - Use additional receiver as temporary base station
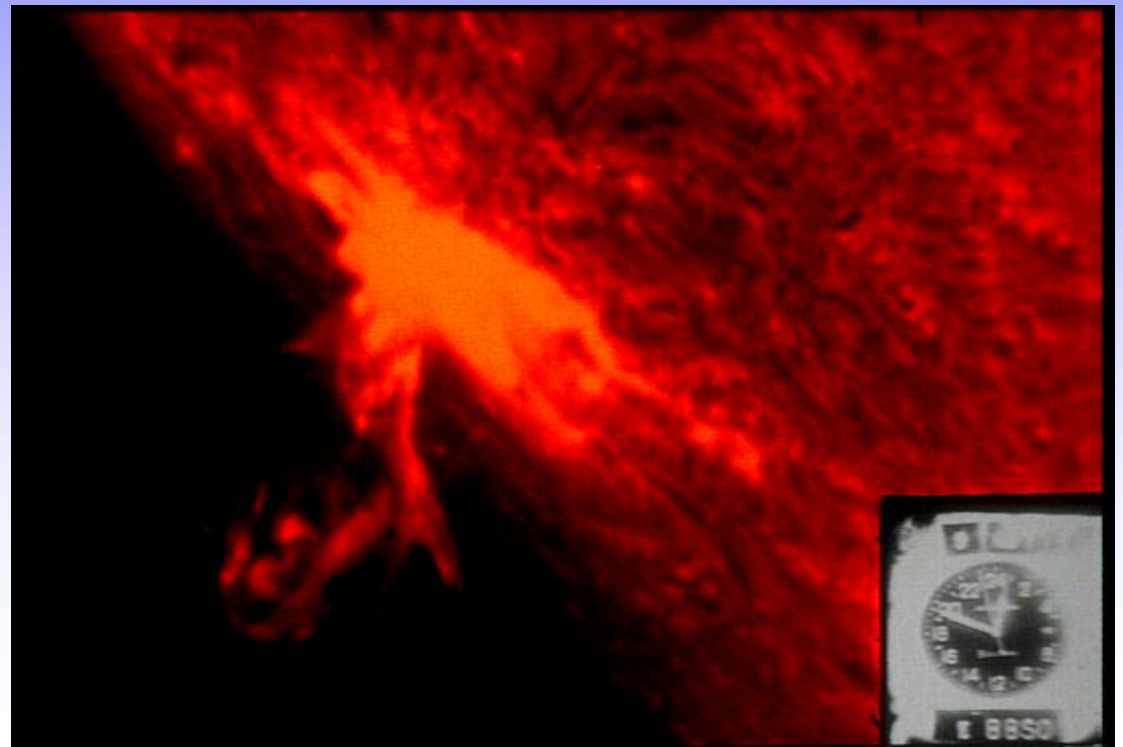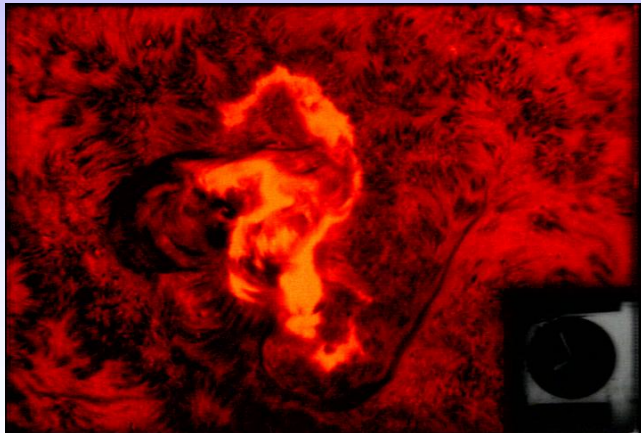 - Carrier processing/Longer occupation times

Increase GPS Accuracy

- **GeoXT suggestions**
  - Recognize common sources of error
  - Occupy known control points to verify accuracy
  - Use Survey receivers w/GeoXT running TerraSync for cm GIS data collection
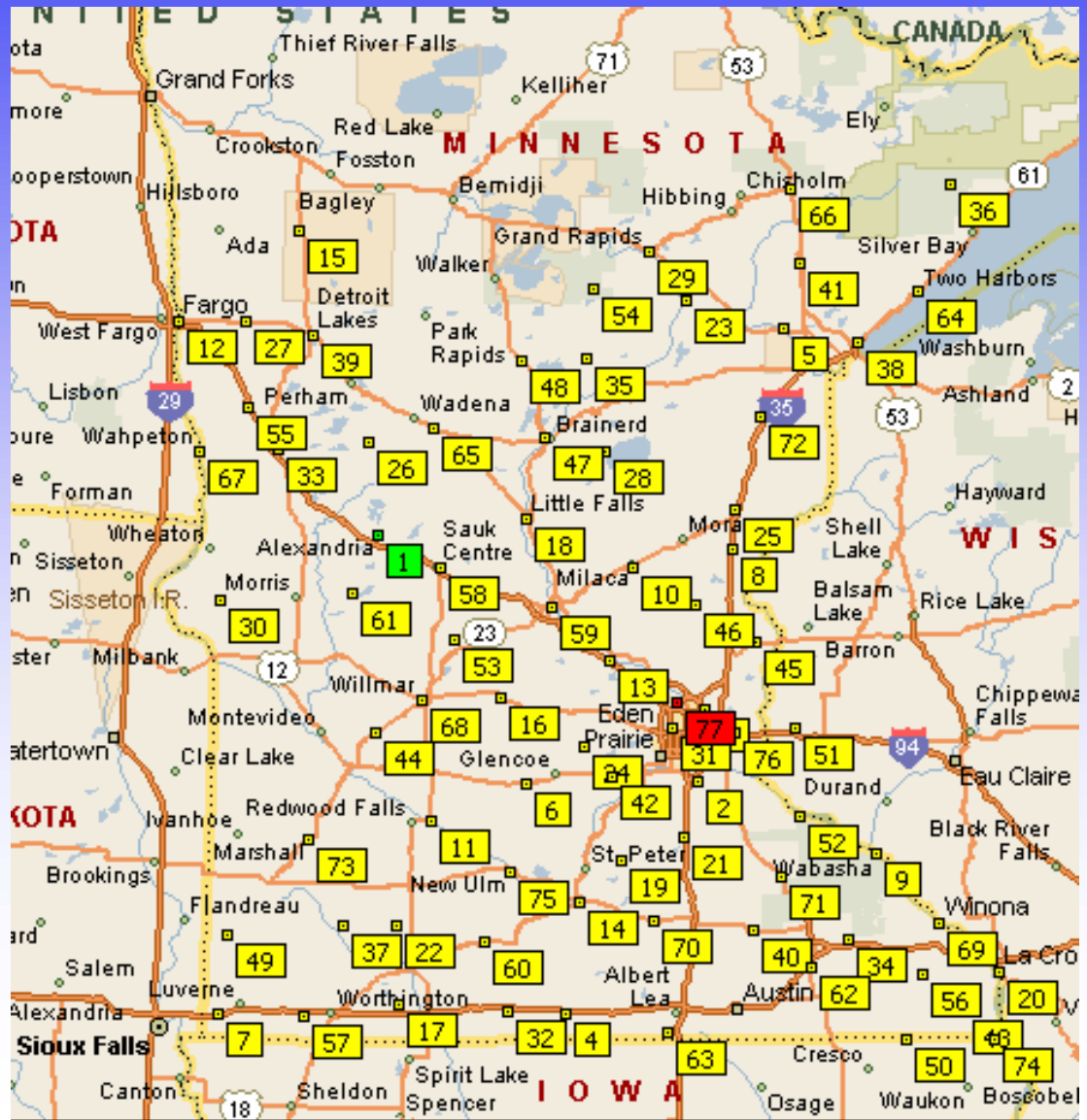
Increase GPS Accuracy

- Monitor sun spot activity:
http://solarscience.msfc.nasa.gov/SunspotCycle.shtml

Increase GPS Accuracy

- **GeoXH**
  - H-Star Technology

Increase GPS Accuracy

- **GeoXH**
  - Extra data (L2) collected to measure rather than model Ionospheric conditions
  - Sub-foot, 20cm - 30cm
  - Short occupation times, 2-10 min carrier lock
  - Estimated Post Processed Precisions on screen

Increase GPS Accuracy

- GeoXH
  - Single Base Provider up to 60km
  - Allows longer baselines (up to 300km) using multiple Base Station Providers
  - Even distribution of base providers
  - Ensure that base stations have same datum for reference coordinate*
  - Accuracy summary report after PP

  *webinar coming in November on this topic

- **GeoXH suggestions**
  - Use Zephyr Antenna, Pole, BiPod Legs
  - Occupy known control points
  - Export metadata to back up accuracy and provide QC

Maximizing Productivity

- Training
- Managers' Training
- Specialized workshops
- Webinars: How to Crop & Install Mr Sid background files to TerraSync, 10/17/07
- Use resources available
  - Trimble website
  - Trimble Dealers
  - Other users

Maximizing Productivity

- Equipment:
- Ensure Trimble hardware has latest firmware
- Find proper hardware configuration – ProXT/ PF XB with laptop, tablet, mobile, PDA or Geo/Juno for application
- Select hardware that best supports software
- Leverage WM5/6 OS

Maximizing Productivity

- Software:
  - Use software that best fits workflow
    - » ArcPad, TerraSync, CartoPac, SoloField, other??
  - Ensure that your Trimble software has all the latest updates (Call your dealer, or look on Trimble site)
  - Import shapefile to automate creation of data dictionary
  - Plan and Streamline flow of DD

Maximizing Productivity

- **Software**
  - Take existing shapefile data into field to verify information or reduce data entry or to verify location
  - Use navigation function
  - Use map display and background imagery to verify accuracy and completeness of data before returning to office

Maximizing Productivity

- Software Tips – Data Collection
  - Nest features within lines
  - Use Repeat Function to reduce data entry

Maximizing Productivity

- **Peripherals:**
  - Use laser to reduce walking
  - Use camera to gather data faster, tracklog and software, audio notes for attributes
  - Integrate images whichever way works best for workflow
    - » Push to GPS
    - » Merge GPS and images back in the office
    - » Record audio notes to streamline field data capture

Maximizing Productivity

- Processing
  - Batch Processor
  - Batch Procesor
  - Batch Procesor

Questions…??

Any Other Questions…??